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How clean is the food we eat from street vendors in Orlando, Florida?

Bendegul Okumus
University of Central Florida

Sevil Sonmez
University of Central Florida

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Street Food Consumption

Convenience, low cost, and opportunities to experience unique flavors have led to an increase in street food consumption worldwide. According to the U.N.'s Food and Agricultural Organization, over 2.5 billion people consume street food daily, thus creating opportunities for low-capital investors who, in turn, generate jobs. Street food offers gastronomic diversity and boosts economies, but has also been linked to foodborne infections especially in developing countries where hygienic conditions are poor. Serious outcomes of unhygienic food handling practices include bacterial contamination and Hepatitis A. Moreover, low-quality ingredients and cooking utensils with heavy chemical loads (e.g., lead, mercury, arsenic) may lead to increased health risks from ingestion of toxic elements linked to breast cancer, reduced sperm count, infertility, and, in extreme cases, death.

Inspection of Food Trucks

Although developing countries struggle with numerous safety issues, similar data from developed countries are limited. To address these issues, data were collected from food trucks in Orlando, Florida in order to have a clear understanding of risk factors. Preliminary results from a small-scale, exploratory study are presented in two sections. First, the current street food and food truck safety regulations in the U.S. are reviewed, followed by a discussion of inspection challenges and safety risks. According to our findings, there are approximately 117,000 food trucks in the U.S., representing approximately \$857 million in sales annually. Some of these food trucks are unlicensed and may pose additional safety risks such as truck explosions from faulty propane tanks. Despite multiple municipal and state health department restrictions, some truck vendors are unwilling to comply with multiple requirements for food preparation, permits, parking, and inspection processes. Most states schedule health inspections during slow periods when actual cooking, storing, and service risks cannot be accurately observed or evaluated. Even with strict inspection codes and facilities in place,

incomplete or unsatisfactory inspection results can be still observed in county health department websites, indicating poor hygienic conditions and lack of awareness.

Our study investigated the food handling and safety practices of food truck vendors in Orlando. Orlando is one of the most visited tourism destinations globally with 72 million visitors recorded in 2017. Despite boasting 5,000 restaurants in this destination, food trucks have been increasing in popularity as a source of quick and low-cost meals for visitors and residents alike. Food samples were collected from food trucks and analyzed for microbiological contamination. To investigate possible safety risks, 30 different samples were collected, and contamination levels of the most common bacteria associated with foodborne infections, *E. coli* and *Salmonella* spp., were analyzed at the University of Central Florida. Preliminary lab results detected *E. coli* and *Salmonella enterica* in 14 of 30 food items and found DNA of eight different harmful bacteria to be prevalent in both cooked and raw samples that included chicken, vegetables, hamburger, salad, sauces, tacos, bacon, and shrimp.

Concluding Comments

To conclude, this is the first study to investigate the risk factors involved when consuming food from food trucks in Orlando, Florida. The research findings imply that, even under strict food regulations, harmful bacterial contamination is a risk when eating street food from food trucks. Our findings further highlight food safety risks and ineffectiveness of routine food safety inspections of food trucks, even if they pass inspection. Strict safety regulations can decrease public health risks but cannot fully guarantee the prevention of foodborne infections. Consequently, authorities should arrange impromptu, randomly timed, risk-based inspections. They should also manage the supervision and frequent monitoring of such facilities. In addition, customers should look for vendors who regularly use gloves and hair/beard nets, and check for the cleanliness of trucks, service areas, and food preparers' hands. Customers should also watch for loose hair, messy counters or sinks, and food and beverage temperatures (hot food should be hot, cold food should be cold). Consumers' vigilance in reporting food safety issues,

combined with frequent monitoring, can further help reduce public health risks and increase consumer awareness and well-being.

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